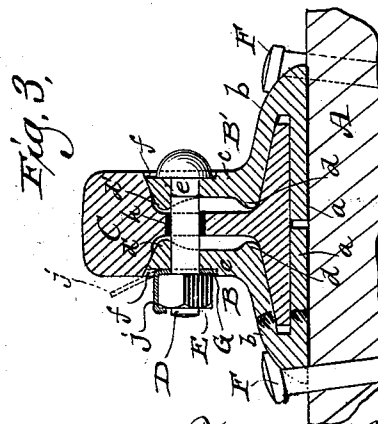
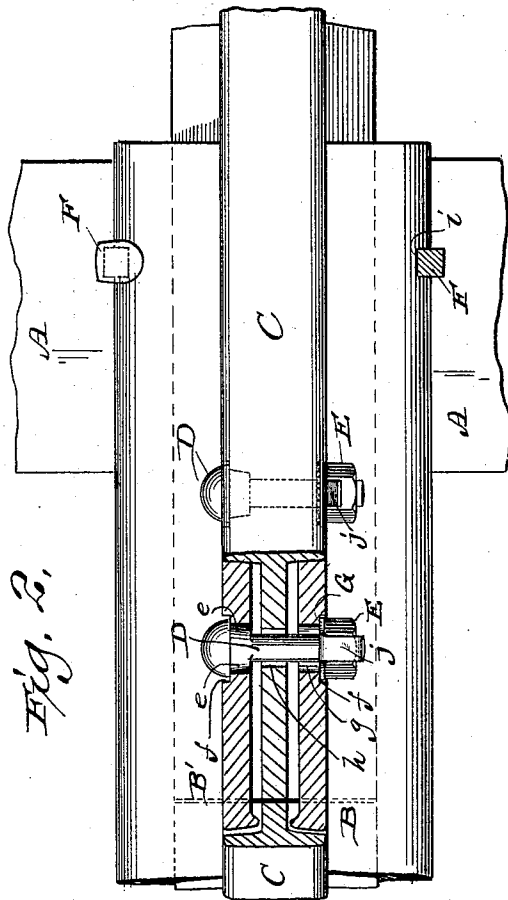
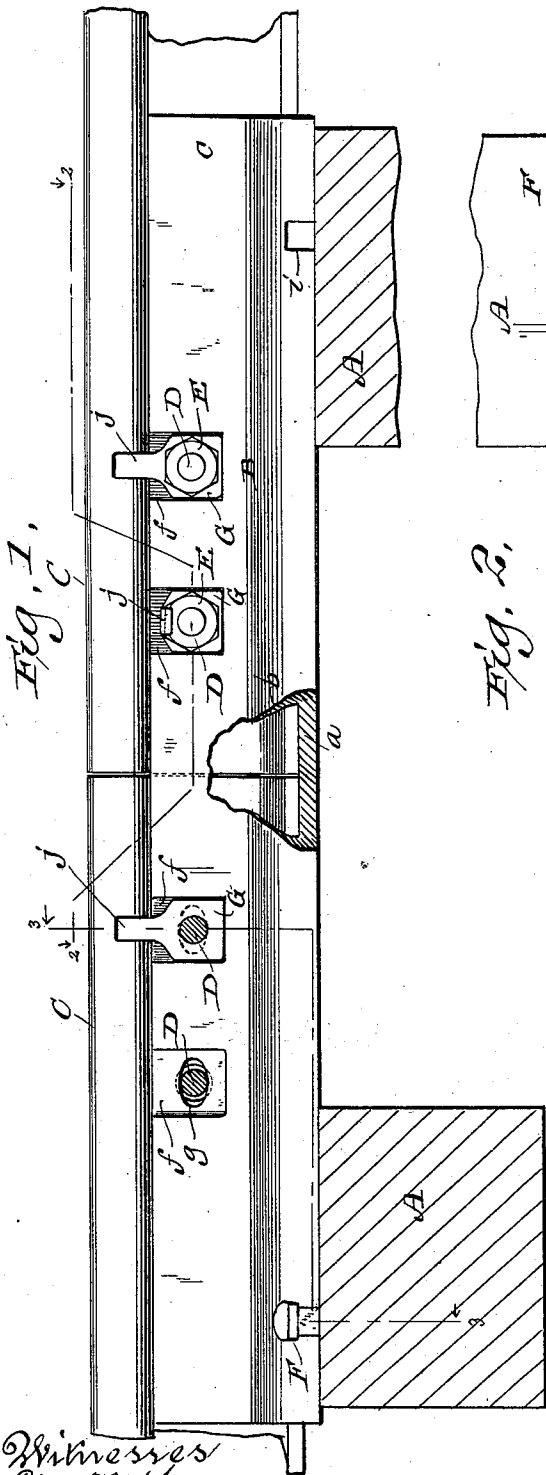


(No Model.)

L. A. MILLER.
RAIL FASTENING.

No. 507,824.

Patented Oct. 31, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

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RAIL-FASTENING.

SPECIFICATION forming part of Letters Patent No. 507,824, dated October 31, 1893.

Application filed November 28, 1892. Serial No. 453,308. (No model.)

To all whom it may concern:

Be it known that I, LEE A. MILLER, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Rail-Fastenings; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to rail fastenings, and consists in certain peculiarities of construction and combination of parts, as will be hereinafter more fully set forth, and subsequently claimed.

In the drawings, Figure 1 is a side elevation showing the meeting edges of two adjacent railroad rails, supported and fastened by my improved devices, portions being shown as broken away, or in section, to better illustrate details of construction. Fig. 2 is a plan view of the same, partly in section on the line 2—2 of the preceding figure, and Fig. 3, is a transverse sectional view on the line 3—3 of Fig. 1.

A A designate two railroad ties, of any ordinary construction, these ties being placed adjacent to the opposing ends of two pairs of rails, and in practice being either of less height than the ties intermediate of the end ties of the said rails, or else being lowered deeper into the road-bed than such intermediate ties.

B B' designate a pair of angular supporting plates, forming a chair for the rail ends. These plates have each a flat base, *a*, resting on the ties A A and extending, preferably, beyond the outer edges thereof, as shown, an upper or face portion, *b*, designed to rest upon the upper surface of the rail-base, and an upright flange, *c*, having, preferably, longitudinal ribs, *d d'*, on its inner surface, and at the top being in engagement with the under side of the tread of the rail, as shown.

C designates a railroad rail of ordinary construction.

D is a standard railroad bolt, of the kind now ordinarily employed, having flanges or enlargements *e e* extending from its shank, on each side, adjacent to its head, to prevent accidental turning of the bolt, while its nut, E, is being screwed to place. The flanges *c* of the

chair-plates B B' are provided, at intervals, with a series of exterior rectangular depressions *f f*, preferably four to each flange, arranged about as shown in Fig. 1, and an elongated or oval opening, *g*, is cut through each flange *c*, at this point, so as to receive the described flanges or enlargements *e* on the bolts, no matter from which side the bolt is inserted. The web of the rail C is perforated in central line of said opening *g*, as shown at *h*, these openings *h* being of considerably greater diameter than that of the bolts D, to insure ease and rapidity in the insertion or withdrawal of the said bolts, as well as to allow for the expansion or contraction of the rails, under variations of temperature. The lower external edges of the plates B B' are further preferably notched out, as shown at *i i*, for engagement with the shanks of the spikes F F by which the chair plates and their contained rails, are held to the ties A A. All parts of the chair-plates fit snugly against the rails C, in use, but the bases, *a, a*, of the former, do not quite meet, at the center, a space being there left, as shown in Fig. 3.

G G designate washers, formed of any suitable material, such as tough, but flexible, wrought iron, each having side and bottom edges conforming in shape to that of the adjacent walls of the described depressions *f f* in the plate-flanges *c*, and an upward projecting finger *j*. The outer edge of the flange *c* is designed to be normally flush with that of the rail-tread except at the points of the said depressions *f*, and when the parts are put together, and the bolts D inserted to place, one of these washers is slipped on the threaded end of each bolt, and the nut E screwed on, which forces the finger *j* of the washer first into the position shown best, in dotted lines, in Fig. 3, and then this finger *j* is bent down over the nut E, as shown best, in full lines, in said figure, thereby forming a lock to prevent the accidental withdrawal or displacement of the bolt, and while this holds the bolt perfectly firm in place, the said finger *j* can be easily and quickly raised, by any suitable or ordinary tool, should it be desired for any reason, to withdraw the bolt. In the event of employing a bolt with a square or polygonal head, and without the described

flanges *e e*, one of these washers may also be applied to this end of the bolt, fitting as before in the depression in the plate-flange *c* on that side of the chair, and the finger of this washer may be bent over the head of the bolt, just as the finger of the washer on the other end of the bolt is bent over its nut, thereby effectually locking a common bolt, quite as well as it does the standard bolt shown and described.

With my improved device, I dispense with all ties beneath the meeting edges of each two adjacent pairs of rails, and afford a firmer support for the same, thereby not only lessening the cost of track-laying, but doing away with all possibility of unevenness and consequent jar and wear at these points, as is now common, where two ties are placed together beneath such meeting edges, and as my chair-plates extend preferably beyond the outer edges of the ties on which they rest, a firm even support is afforded, the strain being distributed evenly over the whole width of said ties. My chair-plates are made of any suitable material, such as cast steel, or may, if desired, be rolled into the desired shape, and in connection with the described washers, form a simple, cheap, durable and very efficient rail fastening, adapted for use with the ordinary ties, spikes and rails, without any change in the latter. It will be understood

that the depressions in the plate-flanges need not be rectangular in outline, so long as they are not circular, and the outlines of the washers are of corresponding shape.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a rail fastening, the combination with a pair of angular supporting plates, each adapted to receive one half of a rail base, and having upright flanges, each bearing against one side of the web and tread of a rail and each provided with exterior rectangular depressions in the upper portion only of said upright flanges, and with horizontally elongated openings through the same, of bolts having elongated enlargements under their heads engaging said elongated openings in the said upright flanges, and adapted to be inserted from either side, and locked to place by nuts and washers within said depressions, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

LEE A. MILLER.

Witnesses:

H. G. UNDERWOOD,
JOHN E. WILES.